

Attorney Docket No.: 8007P17
Reply to Office Action mailed 25 February 2004

REMARKS

Claim Objections

In the Office Action, the examiner objected to claims 1 and 5 on the basis that in claim 1, it was unclear whether "an object" in lines 5 and 8 were the same, while "previous data" in claim 5 had no antecedent. These claims have therefore been amended to address these objections.

35 USC §112 Rejections

In the Office Action, the examiner rejected claims 21 - 27 under the second paragraph of 35 USC §112 in that "plurality" (line 10) and "image data" (line 11) of claim 21 are indefinite.

Claim 21 has now been amended to clarify, where necessary, "first" or "second" pluralities and image data. As claims 22 - 27 were only included in the rejection as being dependent from claim 21, it is submitted that the amendment to claim 21 overcomes the rejection of each of those claims.

35 USC §102(b) Rejections

The Examiner stated that Claims 1 - 5, 7 - 9, 11 - 15, and 17 - 19 are anticipated by U.S. Patent 6,064,759 to Buckley and are therefore unpatentable under 35 USC §102(b). Reconsideration of the rejections is respectfully requested for the following reasons.

Buckley's system is intended to scan several identical parts, and to confirm that the parts are within a given size range, and are defect-free. Buckley discloses a system

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whereby a geometrical model of a piece is stored as a computer file in the system's memory. Buckley's system first analyzes the geometric model to determine which points must be scanned to obtain an accurate reading of the object. The system then scans the object at those pre-determined points, obtaining data for those points, which are then analyzed as necessary. The reduction in number of points taken increases the overall speed of Buckley's scanning system. The presence of a predetermined geometrical model, containing information about the object's expected dimensions, is required in order to achieve the increased speed and accuracy attempted by the invention.

Indeed, if there is no geometrical model for the scanned piece in the system's memory, Buckley contemplates a procedure to make one (see column 28, lines 31 and following). However, Buckley acknowledges that this "set-up" step will be much slower and will require the computer to analyze more points than a regular inspection/scanning step (see column 29, lines 44 and following).

In contrast, the present invention is a dynamic system that does not require a pre-stored geometric model. The approach of the present invention is to achieve efficiencies in scanning by selecting portions of the array image to be scanned based on data taken from pixels that have already been assessed for the same object (as opposed to a distinct model object). These can be data points obtained in a previous scan cycle (for example, see para. 59), a previous scan line (e.g. para. 47), or earlier points in the same scan line (e.g. paras. 48 and 56), all without requiring data from a pre-stored model.

Claim 1 has therefore been amended to clarify this feature by reciting that the pixels that are selected for scanning in an image are selected based on knowledge of data from pixels previously scanned during the scanning of said object. The examiner will note that the added limitation refers to scanning of "said object" rather than of any other object, such as a model object as in Buckley.

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As claims 2 – 5 and 7 – 9 depend from claim 1, the arguments regarding claim 1 are reiterated for those claims, except that claim 4 has been cancelled.

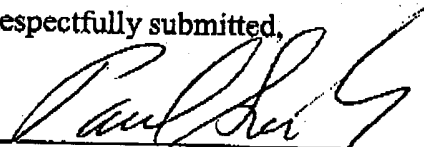
Claim 11 has been amended in a similar manner as claim 1 and the arguments regarding claim 1 are therefore reiterated for claim 11. As claims 12 – 15 and 17 – 19 depend from claim 11, the arguments regarding claim 1 are also reiterated for those claims, except that claim 14 has been cancelled.

New claim 28 has been added. The examiner will appreciate that claim 28 addresses substantially the same invention as does claim 1 but in language that more precisely characterizes the features of one aspect of the invention.

All rejections and informalities having been dealt with, we look forward to allowance in due course.

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Respectfully submitted,



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